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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,612	07/27/2006	Tomohiro Tamai	2271/76675	9515

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COOPER & DUNHAM, LLP  
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NEW YORK, NY 10036

EXAMINER
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HSIEH, SHIH WEN

ART UNIT	PAPER NUMBER
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2861

MAIL DATE	DELIVERY MODE
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10/24/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/587,612	<b>Applicant(s)</b> TAMAI ET AL.	
	<b>Examiner</b> shih-wen hsieh	<b>Art Unit</b> 2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 27 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7, 9 and 10 is/are rejected.
- 7) ☒ Claim(s) 5, 6 and 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                                                  |                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                      | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                             | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>7-27-06</u> . | 6) <input type="checkbox"/> Other: _____                                                |

## **DETAILED ACTION**

### ***Priority***

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. PCT/JP05/22503, filed on Dec. 1, 2005.

A XEROXED copy of the priority document has been received by this office.

### ***Claim Objections***

2. Claims 4 are objected to because of the following informalities:

In regard to:

Claim 4:

Please change the “,” at the end of this claim to a “.”.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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4. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Masami et al. (JP 2000-141704, from IDS dated July 27, 2006).

In regard to:

Claim 1:

Masami et al. teach:

An image forming apparatus for forming an image on a recording medium by ejecting drops of recording fluid from a recording head, comprising:

a waste tank (21, fig. 1) having a space for containing waste fluid, refer to [0018] and [0024];

obtaining means (215, fig. 5, Masami et al. called it a "waste ink quantity calculating circuit") for obtaining a correlation value that has a correlation to a deposited state of the waste fluid in the space within the waste tank, refer to [0032] and the Solution, Examiner's note: Since this waste ink quantity calculating circuit calculates the accumulated value of the waste ink quantity, then this accumulated quantity of the waste ink as a result of such calculation is represented by a value, which corresponds to the "correlation value" (this correlation value indicates the deposited state of the waste ink within the waste tank) as recited in claim 1. Because the calculated quantity, per se, is actually represented by a value, and the way or process to calculate it, is to OBTAIN the value; and

judging means (216, fig. 5) for judging whether or not the correlation value exceeds a reference value, refer to [0032] and [0033], Examiner's note: the reference value in Masami et al.'s case is the capacity of the waste tank 21.

Claim 2:

Masami et al. further teach:

wherein the obtaining means obtains the correlation value from a number of times a recovery process is carried out to eject from the recording head recording fluid that does not contribute to image formation, refer to [0017] and [0018] and also the Solution, in which, the word of "ACCUMULATED" means a number of times a recovery process is carried out to eject from the recording head recording fluid that does not contribute to image formation.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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6. Claims 3, 4, 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masami et al.

In regard to:

Claim 3:

The device of Masami et al. DIFFERS from claim 3 in that it does not teach:

wherein the waste tank includes an absorbing member for absorbing and holding the waste fluid.

A waste tank includes an absorbing member for absorbing and holding the waste fluid is well known in the ink jet printer art, refer to MPRP 2144.03, In re Malcolm, 129 F.2d 529, 54 USPQ 235 (CCPA 1942).

Therefore, it would have been an obvious matter to include an absorbing member in the waste tank for the purpose of holding the waste liquid.

Masami et al. still further teach:

detection means (216, fig. 5) for detecting a fully absorbed state of the absorbing member, refer to [0033].

Claim 4:

The device of Masami et al. DIFFERS from claim 4 in that it does not teach:

wherein a volume ratio of the space and the absorbing member within the waste tank is in a range of 1:4 to 3:2.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to set up a ratio between the space and the absorbing member, since it has been held that where the general conditions of a claim are disclosed in the prior art, such as a

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waste tank has space and an absorbing member is disposed inside the tank, discovering the optimum or workable ranges involves only routine skill in the art, refer to MPEP 2144.05 II A.

Claim 7:

The image forming apparatus as claimed in claim 1, wherein the reference value is constant.

Rejection:

Masami et al. teach in their "Solution" that the accumulated value of the waste ink is compared with a "capacity" of the waste tank 21, The word "capacity" is obviously a constant value such that the accumulated value of the waste ink is compared with this capacity, a constant value, so as to decide whether the capacity has been exceeded.

Claim 9:

The device of Masami et al. DIFFERS from claim 9 in that it does not teach:

wherein a usable state of the image forming apparatus is limited when the correlation value exceeds the reference value.

According to Masami et al., when the waste tank is fully occupied, the tank is going to be replaced, see Solution.

Therefore, it would have been an obvious matter to shut down the printer so as to allow an user to get into the internal of the printer to replace the tank. To shut down the printer to perform a service job such as replacing the waste tank is a common practice or for a safety purpose so as not to injury the user if the power to the printer is left on during the serving process.

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7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masami et al. in view of Takemoto (US Pat. No. 6,075,069).

The device of Masami et al. DIFFERS from claim 10 in that it does not teach:

wherein the recording fluid includes a water-dispersible coloring agent, a wetting agent and a penetrating agent, and has a viscosity increase rate due to moisture evaporation that is 1.0 or less up to a moisture evaporation rate of 30% with respect to a total weight of the recording fluid and is 50 or greater for moisture evaporation rates of higher than 30% and less than or equal to 45%.

This claim first deals with the ingredients of the ink, all of the three items: (1) a water-dispersible coloring agent, (2) a wetting agent and (3) a penetrating agent recited in this claim are well known to one skilled in the art. Nevertheless, Takemoto's reference teaches all of those, please refer to col. 1, lines 15-19 and lines 38-45.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to include the water-dispersible coloring agent (the colorant), the wetting agent and the penetrating agent as taught by Takemoto for the purpose of providing color printing, preventing clogging and providing high quality color image respectively.

As to the viscosity increase rate etc. in the last portion of this claim:

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to select ingredients to make up the ink such that the ink will meet those figures in this claim, since it has been held that where the general conditions of a claim are disclosed in the prior, discovering the optimum or workable ranges involves only routine skill in the art, refer to MPEP 2144.05 II A.



***Allowable Subject Matter***

8. Claims 5, 6 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter:

In regard to:

Claims 5 and 6:

The primary reason for the allowance of claims 5 and 6 is the inclusion of the limitation of wherein the reference value is changed based on a recovery process frequency at which the recovery process is carried out. It is this limitation found in each of the claims as they are claimed in the combination, which has not been found, taught or suggested by the prior art of record that makes these claims allowable over the prior art.

Claim 8:

The primary reason for the allowance of claim 8 is the inclusion of the limitation of wherein the correlation value is corrected depending on an environment condition. It is this limitation found in this claim as it is claimed in the combination, which has not been found, taught or suggested by the prior art of record that makes this claim allowable over the prior art.

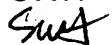
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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to shih-wen hsieh whose telephone number is 571-272-2256. The examiner can normally be reached on 9/5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Luu can be reached on 571-272-7663. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SWH



Oct. 19, 2007

SHIH-WEN HSIEH  
PRIMARY EXAMINER

